



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,023	04/07/2004	Guangqiang Jiang	A369-USA	9230
24677	7590	07/26/2006	EXAMINER	
ALFRED E. MANN FOUNDATION FOR SCIENTIFIC RESEARCH PO BOX 905 SANTA CLARITA, CA 91380			SAVAGE, JASON L	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/821,023
Filing Date: April 07, 2004
Appellant(s): JIANG ET AL.

Gary Schnittgrund
For Appellant

MAILED

JUL 26 2006

GROUP 1700

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5-16-06 appealing from the Office action
mailed 12-13-05.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference

Art Unit: 1775

characters. The brief is deficient because appellant recites the invention relates to an assembly that is implantable in living tissue consisting of (emphasis added) a stainless steel metal part and titanium metal part that are bonded together. The claimed subject matter is the recited assembly comprising the claimed components.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Chang et al. (US 6,722,002) and Cusano et al. (US 3,994,430).

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US 6,722,002).

Chang teaches a brazing filler materials comprising laminated foil layers which are suitable for use in bonding metal component parts consisting of Ti, Fe or Ni based alloys (col. 2, ln. 38-45 and col. 5, ln. 41-56). Chang further teaches a brazed component assembly comprising a 316 stainless steel metal part bonded to a composite filler material comprising two outer foil layers of nickel and an inner foil core layer of titanium (col. 6, ln. 52-57). Chang also teaches that titanium metal parts can be

Art Unit: 1775

bonded to other metal parts by employing the brazing filler material to form a composite assembly (col. 6, ln. 65-67).

Chang does not exemplify an embodiment wherein a component assembly comprises a stainless steel part bonded to a titanium part via a filler layer comprising nickel and titanium foils. However, since Chang teaches bonding a titanium part with the filler comprising nickel and titanium layers (col. 6, ln. 58-64) and further teaches bonding a stainless steel part with a similar filler comprising nickel and titanium layers (col. 6, ln. 52-57); it would have been within the purview of one of ordinary skill in the art to have recognized that one could form a composite wherein a stainless steel part was bonded to a titanium part via the recited filler layer with a reasonable expectation of success. Absent a teaching of the criticality or showing of unexpected results from the claimed assembly composite, it does not provide a patentable distinction over the prior art.

Regarding the limitation that the assembly be suitable for use in living tissue, since the assembly of Chang has the same structure and same materials as that claimed by Applicant, it would have been just as suitable for use in living tissue as that claimed by Applicant. Furthermore, the limitation that the assembly is suitable for use in living tissue is merely an intended use. Statements of intended use are not considered patentably distinguishing limitations. See Ex parte Masham 2 U.S.P.Q.2d 1647, 1648. In re Thuau 135 F.2d 344, 47 U.S.P.Q. 324. Application of Hack, 245 F.2d.246, 114 U.S.P.Q. 161.

Art Unit: 1775

Regarding claim 2, an assembly comprising the filler having two outer layers of nickel as described by Chang (col. 6, ln. 52-57) would meet the claim limitation of a nickel foil layer being adjacent to the titanium part.

Regarding claim 3, the Ni/Ti/Ni filler structure taught by Chang (col. 6, ln. 52-57) would meet the claim limitation.

Regarding claim 4, although Chang teaches the preferred placement of Ti layers in the brazing filler is somewhere in the middle layer; Chang clearly teaches that the constituents of the brazing alloys can be arranged in any sequence and that other arrangements other than the preferred arrangement with Ti in the middle may be useful in specific circumstances (col. 5, ln. 57-67). As such, it would have been obvious to one of ordinary skill in the art to have arranged the alloy layers in any sequence, including sequences wherein the outer layers were Ti wherein the specific arrangement of material layers would be determined by the specific circumstances in which the assembly were to be used. Absent a teaching of the criticality or showing of unexpected results, the claimed sequence of material layers does not provide a patentable distinction over the prior art.

Regarding claim 5, Chang teaches the stainless steel part is a 300 series stainless steel such as 316 (col. 6, ln. 52-57).

Regarding claims 6 and 8, although Chang is silent to the use of 316L stainless steel and Ti-6Al-4V, it would have been within the purview of one of ordinary skill in the art to have recognized that a wide variety of stainless steel and titanium alloys could be employed in the component assembly of Chang with a reasonable expectation of

Art Unit: 1775

success. Absent a teaching of the criticality or showing of unexpected results from the use of the claimed alloys, they would merely be a design choice and thus do not provide a patentable distinction over the prior art.

Regarding claim 7, Chang teaches the titanium part may be a titanium alloy (col. 6, ln. 58-67).

Regarding claim 9, Chang teaches the filler reacts with and bonds to the metal parts (col. 6, ln. 6-14).

Regarding claim 10, Chang teaches the filler thickness of the nickel and titanium composite filler is typically 0.010 inches thick and that the thickness may be further reduced by cold rolling (col. 6, ln. 52-57). Chang further teaches that the brazing temperature is about 950°C (col. 7, ln. 1-5 and col. 8, ln. 7-19) which is less than the melting point of the titanium and stainless steel parts but greater than a melting point of the Ni-Ti eutectic formed from the filler material.

Regarding claims 11-12, the claims are drawn to article, not the method of making. Absent a teaching of the criticality or showing of unexpected results due to forming the filler foil layers by the claimed methods, they would not provide a patentable distinction over the prior art. Furthermore, it would have been obvious to have used nickel and titanium foils formed by any known method for the filler in the assembly of Chang with a reasonable expectation of success.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US 6,722,002) in view of Cusano et al. (US 3,994,430).

Chang teaches what is set forth above however it is silent to at least one of the filler layers being formed from metallic particulate. Cusano teaches a method of bonding metals to other metal substrates (col. 2, ln. 32-33). Cusano further teaches that a bonding agent may be used to bond the metal part to the other metal part and that the agent may be in particulate form (col. 3, ln. 20-30). Although it is recognized that Cusano teaches that the bonding is a direct bond wherein no intermediate layer of solder metal or the like is employed, Cusano is merely provided as a teaching that it is known in the art that bonding materials for bonding metal parts can be provided in particulate form. It would have been obvious to one of ordinary skill in the art to have recognized that bonding agents or layers such as the filler layers of Chang could be employed in a variety of forms including as layers comprising particulates with a reasonable expectation of success.

It is well settled that the test of obviousness is not whether the features of one reference can be bodily incorporated into the structure of another and proper inquiry should not be limited to the specific structure shown by the references, but should be into the concepts fairly contained therein, and the overriding question to be determined is whether those concepts would suggest to one of ordinary skill in the art the modifications called for by the claims, *In re Van Beckum*, 169 USPQ 47 (CCPA 1971), *In re Bozek*, 163 USPQ 545 (CCPA 1969); *In re Richman*, 165 USPQ 509 (CCPA 1970); *In re Henley*, 112 USPQ 56 (CCPA 1956); *In re Sneed*, 218 USPQ 385 (Fed. Cir. 1983).

In response to the issue whether the reference is nonanalogous art, it has been held that the determination that a reference is from a nonanalogous art is twofold. First, one decides if the reference is within the field of the inventor's endeavor. If it is not, one proceeds to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved, *In re Wood*, 202 USPQ 171, 174. In the instant case, both Chang and Cusano are generally drawn to bonding metal parts through the use of bonding assisting agents or materials.

(10) Response to Argument

A. Claims 1-12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al (US 6,722,002).

Appellant argues on page 5 of the Appeal Brief that Chang teaches away from the use of nickel as the outside 'fraying face" when he teaches that copper has several advantages over nickel. This argument is not commensurate in scope with claims 1-2 and 4-13. Regarding claim 3, as was set forth in the final rejection of 12/13/05, Chang teaches alternate embodiments wherein nickel is used as the outer layer (col. 6, ln. 52-57). As such, Appellants assertion that Chang teaches away from that claimed in claim 3 having a filler with a nickel top and bottom layer is not persuasive.

Appellant further argues on page 5 of the Appeal Brief that Chang does not teach the component assembly taught by Appellants since Chang teaches a roll bonding method of cold-rolling without annealing to generate a multi-layer alloy strip or foil made up of discrete layers of titanium and nickel or copper. It is unclear what precisely

Art Unit: 1775

Appellant believes to be a distinction between that taught by Chang and that claimed by Appellant. Appellant previously has argued that Chang's roll bonding method is not the same as the brazing method employed by Appellant, however this argument was not commensurate in scope with the claims. Should Appellant intend that the formed foil of Chang comprising multiple discrete layers of titanium and nickel is different from the claimed multi-layer filler material comprising foil layers of titanium and nickel, this argument is not persuasive. Absent a teaching of the criticality of the titanium and nickel layers being in foil form prior to combining to form the multi-layer filler material, it would not provide a patentable distinction over the multi-layer foil filler of Chang. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the layers in any conventional form when forming the multi-layer foil of Chang including as individual layers of foil such as is claimed.

Appellant also argues on page 5 of the Appeal Brief that the Examiner's statement that Chang does not have an embodiment which exemplifies the claimed article is an admission that Chang does not teach that which is claimed. The statement by the Examiner is merely an acknowledgement that Chang is not viewed as anticipating the claim, however that does not mean that Chang may not render the claimed invention as being obvious.

Appellant next argues on page 5 of the Appeal Brief that the Examiner has not put forth any evidence to support the contention that one of ordinary skill in the art would recognize that a composite comprising a titanium part and the stainless steel part could be formed. However, Chang teaches that component materials to be joined by the

Art Unit: 1775

composite filler is selected from a narrow set of materials such as Ti, Ni or Fe based alloys (col. 5, ln. 41-43). Chang further teaches that the use of a brazing filler that can be roll bonded provides advantageous properties when bond components of dissimilar materials (col. 2, ln. 3-9). In light of the above teachings, one of ordinary skill in the art would readily envision each combination of materials and combination of dissimilar materials including the claimed combination of titanium and stainless steel parts.

On page 6 of the Appeal Brief Appellant argues that Chang relates to non-analogous art in that Chang teaches a roll bonding method to for a multi-layer foil whereas Appellants teach a brazing method to form a component assembly. This argument is not commensurate in scope with the claims as there are no claim limitations drawn to brazing. Furthermore, the claims are drawn to an article, not the method of making. In addition, Chang teaches that the multi-layer foil is used in brazing processes to join metal parts forming an assembly (col. 6, ln. 52-64).

At the bottom of page 6 of the Appeal Brief Appellant argues that Chang conspicuously limits his teachings to exclude brazing stainless steel to titanium and does not teach all of the elements taught by Appellants. As was set forth above, it is acknowledged that Chang does not anticipate the claimed invention. However, the fact that the claims are not anticipated does not constitute a teaching away from the claimed invention nor does it limit that which Chang's teaches.

At the top of page 7 of the Appeal Brief, Appellant repeats the argument that that Chang teaches Cu is a preferred material layer for the outer fraying face of the filler. As

Art Unit: 1775

was set forth previously, Chang teaches multiple embodiments including an embodiment wherein nickel is used as the outer layer material.

B. Claim 13 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al (US 6,722,002) in view of Cusano et al. (US 3,994,430).

On page 7 of the Appeal Brief, Appellant argues Chang does not teach the filler layers being formed from metallic particulate and that Cusano does not teach the use of a laminate foil or the method of making a laminate foil from metal particulate. Appellant asserts that the combination of the references is based on improper hindsight reasoning. However, as was set forth in the final rejection, Cusano is merely provided as a teaching that it is known in the art that bonding materials for bonding metal parts can be provided in particulate form. As such, it would have been obvious to one of ordinary skill in the art to have recognized that the bonding layers of Chang could be provided in a variety of forms including as layers comprising particulates with a reasonable expectation of success. As further support that the use of bonding materials in layer or particulate form is known, Appellant admitted in the Amendment filed 10/3/05 on lines 10-11 of page 5 that 'it is well known to those skilled in the art to apply the bonding agent/brazing filler metal in the form of foil or in the form of particulate.'

C. Claims 1-12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Chang et al (US 6,722,002)

Art Unit: 1775

Appellant's statement that Jepson claim 30 can not be cited as admitted prior art against the allowability of claims 1-12 since the preamble of claim 30 describes the Appellants' own work and therefore is not eligible as prior art overcomes the rejection to the claims.

D. Claim 13 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Chang et al (US 6,722,002) as applied to claims 1-12 and in further view of Cusano et al. (US 3,994,430).

As noted above, Appellant's statement that the preamble of Jepson claim 30 is their own work overcomes the rejection to the claim.

Art Unit: 1775

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Jason Savage

Conferees:



Jennifer McNeil



Carol Chaney